

# GOLD PANNING



A guide to recreational gold panning on the  
Kenai Peninsula, Chugach National Forest, Alaska



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Department of  
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Kenai Peninsula, Chugach National Forest, Alaska

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# Mining

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... a  
calling  
of  
peculiar  
dignity

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G. Agricola  
1556



## Welcome



Striking it rich! Finding the mother lode! 'Tis the stuff of miners' dreams. Unlike professional gold seekers, recreational gold panners benefit mostly from the adventure. The entire family can share in the fun of prospecting and gold panning.

In this booklet, we explain basic gold panning techniques, how to find gold, discuss mining rights and guidelines, and identify areas available for recreational panning on the Chugach National Forest portion of Alaska's Kenai Peninsula.

Recreational gold panning on lands withdrawn from mineral entry is not a mining activity—it is a privilege. Be aware that panning, sluicing, and suction dredging can adversely affect water quality, thereby impacting vegetation, fish, wildlife, and ultimately people.

During the process of separating soil from minerals, silt may be washed into streams, creating turbid water. Fish, fish eggs, and the aquatic insects have difficulty living in heavily silted water because of its reduced oxygen supply.

***Avoid washing soil and vegetation into streams, and do not dig in stream banks. This increases silt in the stream and is also dangerous. Many banks are unstable and can slide without warning.***

To reduce silt, dig only in active stream gravels. Return rocks or boulders moved during your efforts to their original positions. Aquatic insects, an important food source for salmon, often make their homes under these rocks. A little care will help ensure a healthy water ecosystem for both miners and anglers.



Good luck and good prospecting!



## Gold—significance and uses

**T**he brightness and ornamental beauty of gold have fascinated humans for more than 5,000 years and still does. This most noble metal takes its name from the Germanic “gulth,” meaning glowing or shining metal. Gold often establishes the standard by which wealth is measured.

The physical properties of gold add to its popularity and value. On a scale of 1 to 10, it has an average hardness of 2.8; diamond is 10. So gold is relatively soft, malleable and tarnish resistant. It makes excellent jewelry.

The modern electronics industry uses gold for its corrosion resistance and conducting properties, accounting for  $\frac{1}{3}$  of the industrial demand for gold.

Gold has a specific gravity of 19.3, meaning it is more than 19 times heavier than an equal volume of water.

Gold has a rich yellow color or “kindly” appearance, turning paler as its silver content increases. Gold is relatively easy to identify when you know its properties, but novices can confuse it with minerals such as pyrite and mica. Both can occur with gold. Pyrite, or “fool’s gold,” is brassy light yellow, and brittle (shatters when crushed). Mica is light yellow to bronzy, light weight, and has a platy appearance.



*Figure 1. Hydraulic mining on Juneau Creek. Note hand-stacked boulders and precarious wheel-barrow bridge. ►*



photo by F. H. Moffit, U.S. Geological Survey, 1904

*Figure 2. Sluice box operation on Lynx Creek. Gold-bearing gravel from the stream cut on the right of the photo was shoveled into the sluice box. ▼*




photo by F. H. Moffit, U.S. Geological Survey, 1904





## Kenai Peninsula mining—a history

rew members from the *St. Peter*, a Russian vessel commanded by Vitus Bering, were the first Europeans to set foot in Russian America (Alaska) in 1741. But it was not until 1848 that the Russians mounted an expedition solely to search for precious metals in Alaska.

In 1848, Peter Doroshin, a Russian mining engineer, was sent by the Russian-America Co. to prospect for precious metals in Alaska. He found only a few ounces of placer gold in the upper Kenai River (Figure 6) and his mining venture was abandoned. Doroshin was convinced, however, that large placer gold deposits were present in the Kenai Moun-tains. Thirty-eight years later, his hunch was proven correct.

In the late 1880s, after two seasons of prospecting along Turnagain Arm, a miner named King was rewarded with four pokes of gold. Looking for King's discovery, other prospectors found gold on Resurrection Creek, and other nearby streams in 1894.

As word spread of these discoveries, prospectors began to trickle into the region. In 1895, claims were staked on Mills and Sixmile Creeks and gold was discovered near Girdwood.

By 1896, a full-fledged gold rush was on! The first arrivals were seasoned miners from the American west and Canada. Late comers tended to be inexperienced miners with grand dreams of easy riches. Thousands of prospectors arrived in Cook Inlet during this period to seek their fortunes. News of the district's richness became exaggerated over time dooming many stampeders to bitter failure.

A record amount of gold was produced in 1897. A second short-lived rush occurred in 1898—mainly due to an overflow of miners from the Yukon gold rush in Canada.

Mining was simple—liberal use of a pick and shovel and



## More mining history

a strong back. Miners shoveled gold-bearing stream gravels into sluices (long narrow wooden boxes through which water was run). Slats lying crosswise in the bottom of the boxes caught the gold, and let the gravel waste (tailings) wash through. Rich, shallow deposits were soon gone.

Later, hydraulicking was used. A high pressure water jet broke up the gravels, which in turn were washed through a sluice box. Large amounts of gravel could be processed in a shorter time, allowing lower grade gravels to be mined at a profit. To get enough water at the pressure needed, miners dug long ditches on hillsides above their operations to collect water and funnel it down to the mining area. One such ditch exists today as a straight strip of alder brush on the hillside east of Canyon Creek, 3.2 miles south of Hope Junction.

In some streams, early miners noticed milky-white quartz boulders with small specks of gold in them. Curious prospectors, looking for the source, discovered gold-rich quartz veins on Palmer, Bear, and Sawmill Creeks in 1898.

Settlements at Hope and Sunrise sprang up along the shores of Turnagain Arm. Both mining communities served as supply and entertainment sources for thousands of people. Sunrise all but disappeared after nearby mining played out and fire destroyed much of the town. Placer mining on nearby Resurrection Creek and lode deposits in Palmer Creek kept Hope going. By 1931, only about 20 men were actively engaged in placer mining on local creeks. Today, scant evidence exists of Sunrise, but Hope survives.

Almost 100 years of mining in the northern Kenai Peninsula has produced about 133,800 oz. of placer gold. Hard rock mines produced an additional 30,000 oz. Suction dredging is currently the dominate mining method.



# Mining rights and guidelines



ere are a few simple guidelines that all recreational gold panners should know.

*• Follow all national forest rules such as camping limits, discharge of firearms, use of trails, etc. These regulations are found in Title 36 Code of Federal Regulations (CFR), with general prohibitions in part 261. Copies are available at Chugach National Forest offices in Anchorage, Gird-wood, and Seward. Regulations may or may not be posted.*

*• Gold pans and manual-feed sluice boxes are allowed year-round in streams listed in this booklet. Four-inch or smaller suction dredges are allowed in salmon streams from May 15 to July 15 only with a permit from the Alaska Department of Fish and Game.*

*• No hydraulic mining or use of earth moving equipment is allowed without an approved mining plan of operation.*

*• Work only the active stream channel or unvegetated gravel bars. Do not dig in stream banks!*

*• Recreational gold panning does not allow you to build structures, cut trees or dig up archaeological, historical, or paleontological objects. Nor does it give you the right to obstruct others in recreational pursuits.*

**Mining law.** The 1872 Mining Law, although amended several times, remains essentially intact. The law allows a person to locate a mining claim on federal land and to mine that claim. However, when certain lands are withdrawn from mineral entry, no claims can be staked there (although there may be preexisting claims). The four designated areas in this publication have no mining claims. Any other federal lands in the Chugach National Forest not covered by claims are



## More mining rights and guidelines

likely to have active mining claims.

**Rights.** As a recreational panner, you do *not* have the right to keep others from panning. You can walk, fish, hunt, and recreate on a federal mining claim, but you must respect the claimant's equipment and operation. The claim owner has an exclusive right to mine his/her claim. You must have permission from the claimant to pan on his/her claim.

**Locating existing claims.** Finding out the location of existing claims can be complicated and time consuming. You will need to be able to read topographical maps to establish whether mining claims exist in a particular area or not. Topographical maps for the Kenai Peninsula are available from the U.S. Geological Survey (see **For more information** section).

If you wish to file a claim, or want to know the location, owners, and status of legal claims, do the following:

- Establish the area in which you are interested. (U.S. Bureau of Mines and U.S. Geological Survey publications identify gold-bearing streams.)
- Locate the area on a topographic map by section, township, and range.
- With this information, check with the Bureau of Land Management which keeps current records for all mining claims on federal lands (see **For more information** section).
- Mark claim locations on your topographic map, and go out and look for markers in the field.

A placer mining claim is normally 20 acres, generally measuring 660 by 1,320 feet. The long direction of the claim is usually oriented parallel to the stream. Remember, valid claims may exist with no visible markers. If there is an error in the location description, the marker on the ground rules.





## Geology of the northern Kenai Peninsula

**T**he rocks of the craggy peaks in the Kenai Mountains were born from sands and muds—at least a mile thick—deposited in an ancient sea about 65 million years ago. This material made up large alluvial fans at the western edge of North America. Carried offshore by ocean currents, the sand and muck settled to the sea floor.

The tremendous weight of the sediment caused high pressures and temperatures that baked the muck, forming sandstone and siltstone. Hot silica-rich fluids, moving along faults in the stone, crystallized to milk-colored quartz veins after cooling. If nature was smiling, the fluids in the gold and silver became frozen in the veins. Over time, these veins weathered and released the gold into the streams. Quartz veins can be seen in road cuts on the west side of the Seward Highway, 2.7 miles north of Turnagain Pass.

About 2 million years ago, climatic cooling and heavy precipitation caused the glaciers of the Kenai Peninsula to advance down valleys. Acting like bulldozers, the glaciers pushed the gravels and spread out the placer gold. A warmer trend about 12,000 years ago caused the glaciers to retreat.

Glaciers left U-shaped valleys filled with surface gravels. Knolls and ridges in the Turnagain Pass area were left by the glaciers that once filled the valley to a depth of at least 2,000 feet. Streams running off the glaciers eroded through the thick deposits of gravel containing placer gold. What remained were bench placers perched above present stream levels. Further erosion concentrated the gold-bearing gravel and redeposited the gold in gravel bars and backwaters of the newly formed stream channels. Most Kenai Peninsula gold has come from placers along Crow, Canyon, Resurrection, Lynx, Bear, Mills, Gulch, and Sixmile Creeks.





## Equipment you will need

**T**he basic equipment is quite simple and requires only a minimum investment. A gold pan is most important. Metal pans were used by early prospectors; modern versions are plastic with built-in riffles. In a pinch, frying pans and even hub caps will work. New metal pans generally come with a coating of grease and should be cleaned thoroughly by heating over an open fire. The pan will rust, but some rust is beneficial for collecting fine gold.


### **Suggested equipment.**

- gold pan (plastic with riffles or metal); 14" size is best.
- shovel to loosen gravel from creek bottom.
- grizzly pan with  $\frac{1}{2}$ -inch holes in bottom; this pan helps separate coarse gravel, speeding up the panning process.
- magnifying lens (at least 10X power) to identify minerals.
- sluice box, approximately 3 feet long; (construct or obtain commercially; aluminum version is available.)
- tweezers for picking up gold; a dry finger will also work.
- small magnet for separating out magnetic black sands.
- small glass vials to hold gold.
- rubber gloves to protect hands from cold water.
- rubber boots to keep feet dry while wading in creeks.

Most of these items are available at local miners' and prospectors' supply houses, sporting goods stores, and some hardware stores.



## For your safety

he Chugach National Forest is one of the most diverse and beautiful of the nation's 155 national forests. Its spectacular mountains, marine shorelines, wetlands, and wildlife lure visitors from around the world.

A place as wild as the Chugach does have its dangers, however. A little knowledge and good judgment can help ensure a safe outdoor experience. Here are a few tips.



The Kenai Peninsula is home to brown and black bears. They have roamed here for thousands of years. Obviously, they can be dangerous. You will be panning *in* the stream channel, home of a bear's favorite dinner—salmon. Stay alert and be aware of your surroundings. Get a copy of ***Bear Facts*** from the Forest Service for more information.



We also have some of the world's largest moose. Although they are herbivores, they can still be dangerous—any critter that weighs 1,000 pounds can be dangerous. Moose can get especially cranky if they feel their young are in danger. Watch them from a distance.



The water up here is cold. After all, this is not the tropics—this is ALASKA. And you will be getting wet—the gold is in the *water*. Wear insulated boots and gloves. Wool clothing can keep you warm even when it is wet. Bring extra clothing and dress in layers.



Mine only in the active stream channel—***not along the shore or in cut banks***. Undercutting stream banks and trees is an extremely dangerous activity. Many of these banks are very unstable. Heavy boulders and trees can fall on you if the bank should collapse.





## Where to look for gold



Water is the primary agent in the formation of most placer deposits. Moving water can transport large amounts of material, from fine silt to large boulders, especially during runoff periods. When freed from the rock by weathering, gold is added to stream waters along with rock debris, and is carried along by the stream. Where streams meander, go over falls, or are deflected around boulders, a drop in water velocity occurs, and the gold drops out. Continued agitation by water causes gold to settle down through the gravel until reaching bedrock or an impermeable clay layer. These concentrations are called pay streaks.

The best places to find gold exist where turbulence changes to slower-moving water flow. Check out slower water below rapids and waterfalls, deep pools, and the downstream side of boulders. Inside bends of meanders, upstream ends of sand or “point” bars are good places to pan fine gold, which is renewed yearly during runoff. Bedrock crevices or pockets acting as natural riffles can collect gold. Scoop out and pan material from these spots. Spring, early summer, and just before freeze up in the fall are good times of the year for panning. Water is low and gold-bearing gravel is exposed. To minimize resource damage, confine digging to active, unvegetated stream gravels.







## How to pan

**T**he key to recovering placer gold from gravel is the weight difference which allows gold to move down-ward (concentrate) when agitated. The simplest placer mining tool for this purpose is the pan.

Shovel gravels into a grizzly positioned over the gold pan (see Figures 3a and 3b). Agitate the material through the grizzly. Check the over-sized material for nuggets, then toss. Totally submerge your  $\frac{1}{2}$ -full pan in water. Panning may be done from a squatting or sitting position at the stream edge, in gently moving water, holding the pan between the knees.

Keep pan riffles pointed away from you to catch any gold that might slip over the lip. Liberal water, agitation, and patience are required to persuade gold to settle to the bottom of the pan. While the pan is submerged, break up any clots of dirt and wash any cobbles that may have clay that can trap placer gold. The clay has been removed when the water in the pan starts to clear. Pick pebbles from the pan to get them out of the way. Look for heavy pieces with unusual color or shape. You might find a gold nugget or a gold-bearing piece of vein quartz.

Hold the pan level under water and shake it with a side-ways or circular motion. The gold will settle to the pan bottom. Occasionally tilt the pan, to let the sand-sized material wash out. Dipping the pan in and out of the water with a slightly forward motion while tilted, will wash lighter material away (see Figure 4). Alternate underwater swirling and dipping until only a few spoonfuls of heavy minerals remain. When dark, heavy mineral grains (black sands) are present, the panning is being done right (see Figure 5). Black sands may be a variety of heavy minerals including magnetite, garnet, scheelite, zircon, cassiterite, and platinum.



## More on how to pan

precious and semi-precious stones are uncommon in Kenai Peninsula placers, but keep an eye out for them. ***If it's heavy, keep it*** and seek identification from a geologist or miner.

Beginners are often impatient to find gold quickly. Take your time. During the panning motion, black sand and other fines concentrate in the crease or riffles of the pan. Gold can be separated from black sands by rolling water in the pan with a combination swirling and rocking motion. Lighter material moves to one side, gold stays put. For safety, do the final panning over another container to keep gold from being lost. Dry the fines. Use a magnet to separate magnetic grains and tweezers, a knife blade, or a dry finger to pick up small gold pieces. Save the gold in a water-filled vial.

Examine your gold. Rough, nuggety gold is near its source. Gold that is flat and smooth has traveled some distance from its point of origin. Flour gold has been flattened to a few microns thickness and will float on water.

Panning is a relatively slow method for recovering gold. Experienced panners can process about 10 large pans per hour. A sluice or suction dredge can increase productivity.

**Suction dredges.** Regulations for suction dredges are imposed on some streams by the Alaska Department of Fish and Game (ADF&G). A free ADF&G permit is required to dredge streams that are important for salmon spawning habitat. For information on permits, contact the ADF&G.

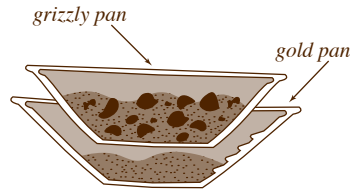
The Chugach National Forest considers a suction dredge, 4-inch diameter or less, operated within the active stream channel, a recreational activity.



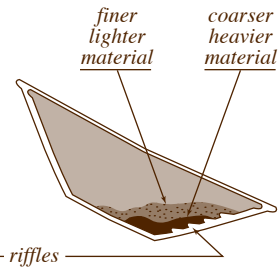
## Even more on how to pan



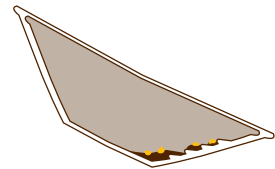
*Figure 3a. A grizzly (a pan with holes in the bottom) is used to separate larger rocks from the finer material.*



*Figure 3b. Pan cross-section. After the rocks caught in the grizzly are examined for gold, they may be discarded.*



*Figure 4. With the pan's riffles pointed away from you, alternate underwater dipping and swirling, until the lighter, finer material is washed away and the heavier material remains in the bottom of the pan.*



*Figure 5. When dark sands (heavy mineral grains) are all that is left (except for the gold, of course), you are panning correctly. Hopefully, your pan will look like this when you are finished.*

Figure 6.





## Kenai Peninsula gold panning areas

**T**here is still gold “in them thar hills,” and we would like you to find some of it. We doubt that you will get rich panning gold recreationally, but you might find some color—and have a great time doing it.

We have selected three sites on the Kenai Peninsula portion of the Chugach National Forest that we feel would have the best potential for yielding gold. These sites are all within two hour’s driving time from Anchorage via the Seward and Sterling Highways.

The following pages describe the three sites in detail. We hope that our descriptions will help you find success in your panning endeavors.

*Good luck.*



Figure 7.





## Bertha Creek panning area



An early prospector named this stream after his daughter. Hand placer and hydraulic mining began in 1902 and may have yielded up to 600 oz. of gold.

Most gold came from the alluvial fan below the canyon.

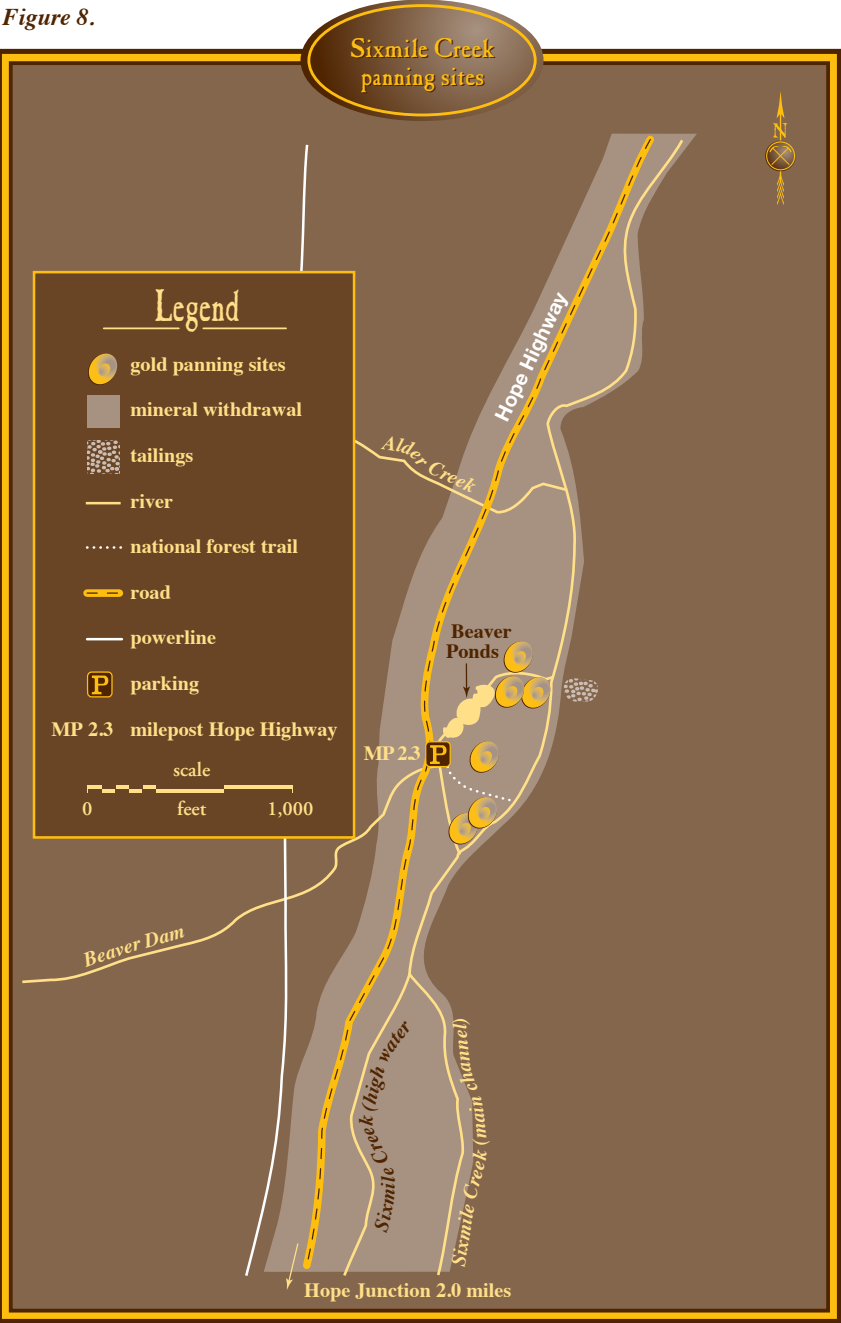
Bertha Creek crosses the Seward Highway 2.6 miles south of Turnagain Pass. Lower Bertha Creek lies within a withdrawal that extends for 1,300 feet on either side of the Seward Highway from Turnagain Pass south to Petes Creek. Bertha Creek is available for recreational panning from its junction with Granite Creek upstream to the powerline crossing (see Figure 7). Granite Creek, however, is closed to recreational mining because of its salmon spawning habitat.

The upper portion of Bertha Creek flows through a glacier-carved valley. Slate bedrock is sporadically exposed for 850 feet along the creek starting 150 feet above the Seward Highway bridge. This stretch usually gives the best panning results. A rough trail can be followed up the east side of the creek. The tan-colored clay layer on bedrock is a good bet for gold that ranges from flaky to nuggety. Single pans have produced pieces up to 1/4-inch long. The rust-colored quartz float in the stream bed occasionally contains pyrite cubes and may be the placer gold source.

Gold has also been panned from nearby Spokane, Lyon, and Tincan Creeks; the withdrawal includes the lower portions. An informal pull-off where the Seward Highway crosses Spokane Creek provides parking for one or two vehicles. Lyon and Tincan Creeks are accessed from the Turnagain Pass rest area. Parking, camping, and picnic sites are available at the Bertha Creek Campground. Motorized vehicles are restricted to established roadways in this area.



Figure 8.







## Sixmile Creek panning area

**S**ixmile Creek was named by early prospectors who determined it to be six miles up Turnagain Arm from Cook Inlet. Gold was discovered in Sixmile Creek in 1895. Hydraulic mining was attempted in the 1930s and several small suction dredge operations have gone on in recent years. Up to 2,000 oz. of gold have been produced from the creek, mainly in the area just below the confluence of Sixmile and Canyon Creeks. A withdrawal, bounded by the east bank of Sixmile Creek and a line 200 ft. west of the center line of the Hope Road, is available for recreational panning—0.7 miles to 5 miles north of the Hope Junction.

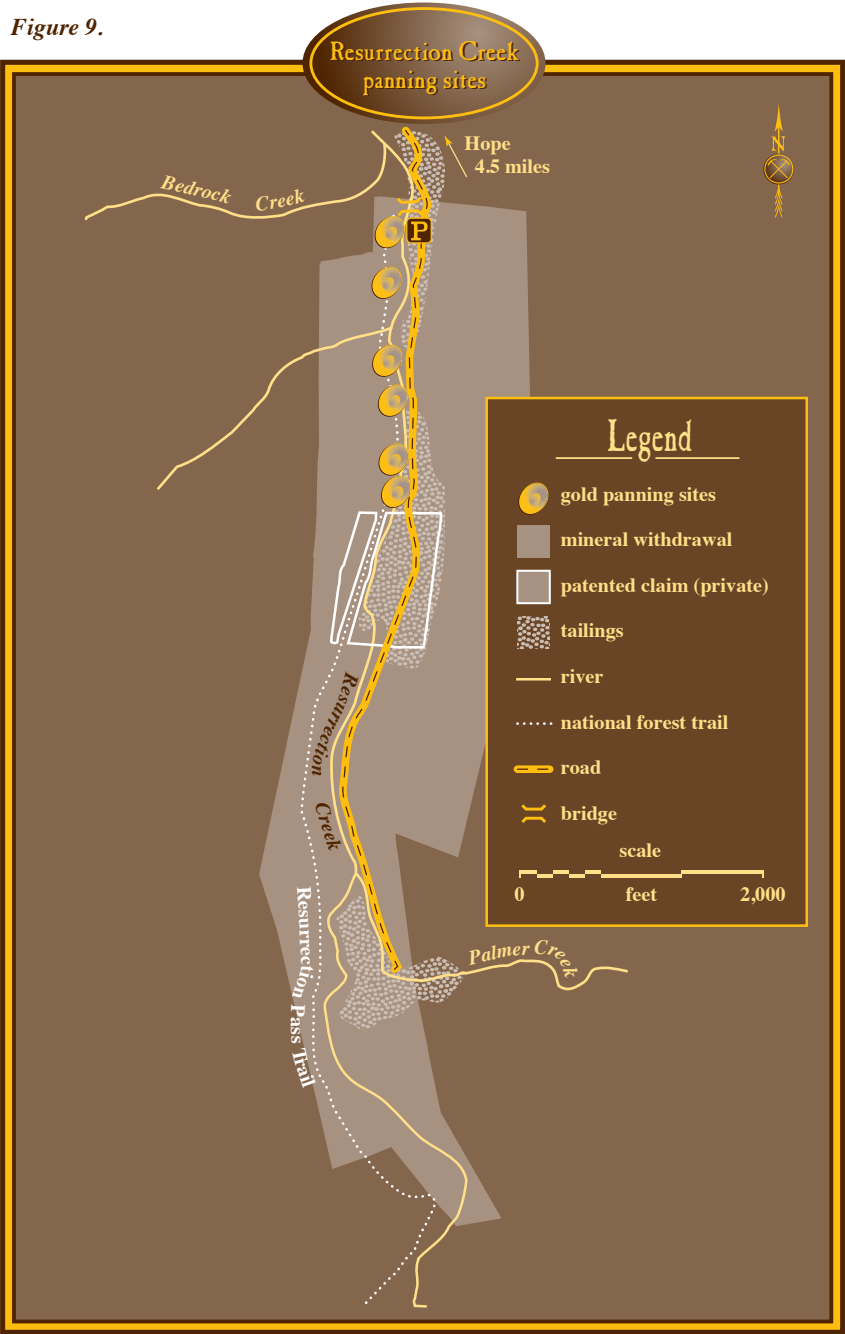
Sixmile Creek flows through a broad glacial valley with numerous gravel bars and some bedrock exposures. At mile 2.2 on the Hope Road, park at the pullout on the east side and follow a steep trail down the road embankment. Detour around the beaver ponds to Sixmile Creek (see Figure 8). Gravel bars along this stretch of creek contain flat flour gold and occasional small flakes. Pans have produced 15–20 fine colors of flat, well-worn gold. The north end of the gravel bar is best where a side meander draining the beaver ponds returns to Sixmile Creek. Panning of gravel on bedrock at this site can also produce gold, but the sites are best accessed during periods of low water. A rusty-colored quartz float along the creek contains pyrite (fool's gold).

Suction dredges (4-inch or smaller) are permitted from May 15 to July 15. Remember that a permit from ADF&G is required for dredging.

Good panning can be found at mile 4.3 on the Hope Road (not shown on map). Pull off on a short side road into the trees and follow the trail to Sixmile Creek. Gold occurs on point bars to the east and old channels next to the creek.



Figure 9.





## Resurrection Creek panning area



he second discovery of gold on the Kenai Peninsula, was on Resurrection Creek in about 1888. The creek has produced an estimated 30,000 to 40,000 oz. of gold since 1895. Below Palmer Creek, Resurrection Creek flows through a 1,000 ft.-wide alluvial flood plain. Creek gravels rest on a tan to yellow clay hard-pan with streaks of blue clay present. Bench gravels are exposed on both sides of the creek. Gold is disseminated throughout the gravel, but is concentrated on clay and bedrock.

A 1.5-mile stretch of Resurrection Creek lies within a withdrawal and is available for recreational gold panning. This area is a favorite site for recreational mining. Suction dredges (4-inch or smaller) are permitted from May 15 to July 15 *with a permit from the Alaska Department of Fish and Game*. Access is by the Resurrection Creek Road out of Hope. The mining area begins at the Resurrection Pass Trail footbridge 4.5 miles from Hope. It continues upstream for 1.5 miles, excluding the patented (private land) claim (see Figure 9). The claim boundary is 0.5 miles up the road from the footbridge and is marked with a gate. The upper portion of the withdrawal, beyond the private ground, is best accessed by taking the Resurrection Pass trail.

Fine gold can be panned from gravels along the creek between the footbridge and private land. Try for fine, flat gold near the campsite 0.25 mile above the footbridge.

Bedrock is exposed on the east canyon wall just above the campsite and just below the private lands. Both spots are good bets for gold. Rounded boulders piled along the creek are tailings from old hydraulic operations. Much of the road has been built on these tailings.



# How much gold have you found?

**J**ust how much gold have you found and what is it worth? The following table is an approximate measure (assuming the gold is 100% pure). Placer gold commonly contains small amounts of silver and other metals. It takes a lot of work to accumulate a small amount of gold. Hours of panning may be worth only a few cents. Historically, nuggets weighing up to 12 oz. have been recovered from the Kenai Peninsula but these are very rare.

| scale   | size (mm)†              | explanation                        | avg. color worth |
|---|-------------------------|------------------------------------|------------------|
|    | >2.0<br>coarse gold     | can be picked up with finger       | \$280/troy oz.*  |
|    | 0.90–2.0<br>medium gold | about 2,200 colors to the troy oz. | 13¢              |
|  | 0.40–0.90<br>fine gold  | 12,000 colors to the troy oz.      | 2¢               |
|  | <0.40<br>flour gold     | 40,000 colors to the troy oz.      | <1¢              |

† millimeter

\* This value is based on the average price of gold in 1999.





## A glossary of mining terms

**P**art of any endeavor is knowing the language. Here are a few of the more common terms used in mining. Knowing these terms will help you be a better recreational panner and help you have more fun, too.

***alluvial fan***—cone-shaped gravel deposit formed where a stream emerges from mountains onto a lowland.

***bedrock***—solid rock underlying gold-bearing gravel.

***claim***—mining ground held under federal or state laws by virtue of location and record.

***color***—a particle of gold found in the prospector's pan after the gravel has been washed.

***concentrate***—minerals which have been separated from less valuable materials.

***false bedrock***—a hard formation, usually a clay layer, within a placer deposit some distance above bedrock.

***fines***—sand or other fine-sized material associated with placer deposits. Usually the last material left during the panning process.

***flour gold***—finest gold dust, much of which will float.

***float***—rock separated from the parent vein by weathering.

***heavies***—minerals of high specific gravity in a placer concentrate, also called black sands.

***lode deposit***—a vein of mineral ore deposited between nonmetallic rock layers.



## More mining terms

**nugget**—a piece of gold that can usually be picked up with the fingers.

**patent**—a government deed that conveys legal title of public land to the party to whom the patent is issued.

**pay streak**—a limited horizon within a placer deposit containing a concentration of gold rich enough to mine.

**placer deposit**—a glacial or alluvial deposit of sand or gravel containing eroded particles of valuable minerals.

**point bar**—the area on the upstream end of a gravel bar which can contain superficial concentrations of flour gold in a thin surface layer.

**poke**—a bag or sack of gold.

**prospector**—a person who searches for valuable minerals.

**riffles**—small ridges in the bottom of a sluice box that catch gold in sand and gravel.

**sluice box**—an elongate wooden or metal trough with riffles, over which alluvial gravel is washed to recover gold.

**stake**—laying out and marking the corners of a mining claim. Originally wooden *stakes* were used.

**suction dredge**—uses a water jet and venturi effect to suck gravel off the stream bed and run it over a set of riffles.

**troy ounce**— $\frac{1}{12}$ -pound, used in reference to amounts of precious metals.





## For further reading

**T**o learn more about gold panning, the history of mining on the Kenai Peninsula, and the geology of mineral deposits in Alaska, you may be interested in the following publications.

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## For more information

f you would like more specific information about recreational mining on the Kenai Peninsula, we encourage you to contact any of the following:

Forest Geologist  
Chugach National Forest  
3301 C Street, Suite 300  
Anchorage, AK 99503-3998  
Tel (907) 271-2500

Minerals Specialist  
Seward Ranger District  
334 Fourth Avenue  
P.O. Box 390  
Seward, AK 99664-0390  
Tel (907) 224-3374

U.S. Geological Survey  
4200 University Drive  
Anchorage, AK 99508-4667  
Tel (907) 561-1181


Minerals Specialist  
Glacier Ranger District  
Monarch Mine Road  
Girdwood, AK 99587  
Tel (907) 783-3242

Alaska Department of  
Fish & Game  
Habitat Division  
333 Raspberry Road  
Anchorage, AK 99518  
Tel (907) 267-2284

Bureau of Land Management  
222 West 7th Avenue, No.13  
Anchorage, AK 99513  
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The solitary seeker with his grub-stake on his back,  
The restless buccaneer of pick and pan.  
On the mesas of the Southland, on the tundras of the North,  
You will find us, changed in face but still the same;  
And it isn't need, it isn't greed that sends us faring forth—  
It's the fever, it's the glory of the game.

Robert Service  
The Prospector



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